

What is claimed is:

1. A protective cushion for a portable unit which includes a casing having an inner surface, a substrate disposed within the casing on which an electric circuit is mounted, and an antenna unit disposed within said casing which includes a package, the package having a first and a second surface, the first surface extending parallel to a surface of said substrate, the second surface extending parallel to the inner surface of said casing, the package being affixed to the surface of said substrate at a plurality of joints provided symmetrically with respect to a preselected point defined on the first surface of the package, comprising:

dampers made of an elastic material which work to absorb physical impact transmitted to the antenna unit;

first contacts provided on said dampers, respectively, the first contacts abutting to the second surface of the package of the antenna unit at locations defined symmetrically with respect to the preselected point; and

second contacts provided on said dampers, said second contacts abutting to the inner surface of the casing.

2. A protective cushion as set forth in claim 1, wherein each of said dampers has a sectional area which is geometrically symmetric with respect to a center line of said damper extending through the first and second contacts when no load is applied to the damper.

3. A protective cushion as set forth in claim 1, wherein said second contacts abut to the inner surface of the casing at locations defined symmetrically with respect to the preselected point.

5 4. A protective cushion as set forth in claim 2, wherein at least one of a set of said first contacts and a set of said second contacts geometrically defines one of a first configuration and a second configuration, the first configuration being circular, the second configuration having a first pair of sides extending parallel to each other and a second pair of sides extending parallel to each other on a
10 plane extending perpendicular to the center line.

5. A protective cushion as set forth in claim 1, wherein each of said dampers is of an isosceles triangular shape in cross section,
15 and each of the first contacts is defined by an apex of the isosceles triangular shape.

6. A protective cushion as set forth in claim 5, further comprising a parallel mount plate placed in abutment with one of
20 the second surface of the package and the inner surface of said casing, and wherein the second contacts are formed integrally with the mount plate.

7. A protective cushion as set forth in claim 5, wherein an apical
25 angle the isosceles triangular shape lies within a range of 45° to 60° .

8. A protective cushion as set forth in claim 1, wherein said dampers and said first and second contacts are formed by an elastic member which is made of a silicone rubber having a Shore hardness
5 lying within a range of 30 to 50.

9. A protective cushion as set forth in claim 1, wherein the casing is made up of a first and a second cover, the second cover having the inner surface on an inner wall thereof, the first and
10 second covers being fitted tightly to each other at peripheries thereof to form a nip in which a waterproof seal is so disposed as to produce an elastic reaction force, and wherein said dampers are disposed in a nip formed by the second surface of the package and the inner surface of the casing so as to produce an elastic reaction force which
15 is lower than the elastic reaction force produced by the waterproof seal.

10. A protective cushion as set forth in claim 1, wherein said dampers and said first and second contacts are formed by an elastic
20 member implemented by an O-ring.

11. A portable unit comprising:
a casing having an inner surface:
a substrate disposed within said casing on which an electric
25 circuit is mounted:
an antenna unit disposed within said casing, said antenna

unit including a package, the package having a first and a second surface, the first surface extending parallel to a surface of said substrate, the second surface extending parallel to the inner surface of said casing, the package being affixed to the surface of said substrate at a plurality of joints provided symmetrically with respect to a preselected point defined on the first surface of the package; and
5 a cushion disposed within said casing to absorb physical impact transmitted to said antenna, said cushion being made of an elastic material and equipped with dampers each of which has a first contact and a second contact, the first contacts abutting to the
10 second surface of the package of said antenna unit at locations defined symmetrically with respect to the preselected point, the second contacts abutting to the inner surface of said casing.

15 12. A portable unit as set forth in claim 11, wherein each of said dampers has a sectional area which is geometrically axi-symmetric when no load is applied to the damper.

20 13. A portable unit as set forth in claim 11, wherein said second contacts abut to the inner surface of said casing at locations defined symmetrically with respect to the preselected point.

25 14. A portable unit as set forth in claim 11, wherein each of said dampers is of an isosceles triangular shape in cross section, and each of the first contacts is defined by an apex of the isosceles triangular shape.

15. A portable unit as set forth in claim 14, wherein said cushion has a parallel mount plate placed in abutment with one of the second surface of the package and the inner surface of said casing, and wherein the second contacts are formed integrally with the mount plate.

16. A portable unit as set forth in claim 14, wherein an apical angle the isosceles triangular shape lies within a range of 45° to 60° .

17. A portable unit as set forth in claim 11, wherein said cushion is made of a silicone rubber which has a Shore hardness lying within a range of 30 to 50.

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18. A protective cushion as set forth in claim 11, wherein said casing is made up of a first and a second cover, the second cover having the inner surface on an inner wall thereof, the first and second covers being fitted tightly to each other at peripheries thereof to form a nip in which a waterproof seal is so disposed as to produce an elastic reaction force, and wherein said dampers are disposed in a nip formed by the second surface of the package and the inner surface of the casing so as to produce an elastic reaction force which is lower than the elastic reaction force produced by the waterproof seal.

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19. A protective cushion as set forth in claim 11, wherein said dampers are formed by an elastic member implemented by an O-ring.